CLAIMS:

1. A genetic marker that resides in 1H chromosome of barley and is linked to a gene locus involved in barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified with a first primer set that comprises a primer having the base sequence of SEQ ID NO: 1 and a primer having the base sequence of SEQ ID NO: 2.

2. A genetic marker that resides in 1H chromosome of barley and is linked to a gene locus involved in barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified with a second primer set that comprises a primer having the base sequence of SEQ ID NO: 3 and a primer having the base sequence of SEQ ID NO: 4.

3. A genetic marker that resides in 1H chromosome of barley and is linked to a gene locus involved in barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified with a fifth primer set that comprises a primer having the base sequence of SEQ ID NO: 19 and a primer having the base sequence of SEQ ID NO: 20.

4. A genetic marker that resides in 1H chromosome of barley and is linked to a gene locus involved in barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified with a sixth primer set that comprises a primer having the base sequence of SEQ ID NO: 21 and a primer having the base sequence of SEQ ID NO: 22.

5. A genetic marker that resides in 1H chromosome of barley and is linked to a gene locus involved in barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified with a seventh primer set that comprises a primer having the base sequence of SEQ ID NO: 23 and a primer having the base sequence of SEQ ID NO: 24.

6. A genetic marker that resides in 2H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with an eighth primer set that comprises a primer having the base sequence of SEQ ID NO: 25 and a primer having the base sequence of SEQ ID NO: 26.

7. A genetic marker that resides in 2H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified a ninth primer set that comprises a primer having the base sequence of SEQ ID NO: 27 and a primer having the base sequence of SEQ ID NO:

28.

8. A genetic marker that resides in 3H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified a third primer set that comprises a primer having the base sequence of SEQ ID NO: 5 and a primer having the base sequence of SEQ ID NO: 6.

9. A genetic marker that resides in 3H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified a fourth primer set that comprises a primer having the base sequence of SEQ ID NO: 7 and a primer having the base sequence of SEQ ID NO: 8.

10. A genetic marker that resides in 3H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with a tenth primer set that comprises a primer having the base sequence of SEQ ID NO: 29 and a primer having the base sequence of SEQ ID NO:

30.

11. A genetic marker that resides in 3H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with an eleventh primer set that comprises a primer having the base sequence of SEQ ID NO: 31 and a primer having the base sequence of SEQ ID NO: 32.

12. A genetic marker that resides in 3H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified a twelfth primer set that comprises a primer having the base sequence of SEQ ID NO: 33 and a primer having the base sequence of SEQ ID NO: 34.

13. A genetic marker that resides in 4H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with a thirteenth primer set that comprises a primer having the base sequence of SEQ ID NO: 35 and a primer having the base sequence of SEQ ID NO: 36.

14. A genetic marker that resides in 4H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with a fourteenth primer set that comprises a primer having the base sequence of SEQ ID NO: 37 and a primer having the base sequence of SEQ ID NO: 38.

15. A genetic marker that resides in 4H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with a fifteenth primer set that comprises a primer having the base sequence of SEQ ID NO: 39 and a primer having the base sequence of SEQ ID NO: 40.

16. A genetic marker that resides in 4H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with a sixteenth

primer set that comprises a primer having the base sequence of SEQ ID NO: 41 and a primer having the base sequence of SEQ ID NO: 42.

17. A genetic marker that resides in 5H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with a seventeenth primer set that comprises a primer having the base sequence of SEQ ID NO: 43 and a primer having the base sequence of SEQ ID NO: 44.

18. A genetic marker that resides in 5H chromosome of barley and is linked to barley resistance to yellow mosaic disease,

wherein the genetic marker is amplified by:

ligating a DNA fragment, obtained by digesting genomic DNA of barley with restriction enzymes MseI and EcoRI, to an MseI adapter having the base sequences of SEQ ID NO: 47 and 48, and an EcoRI adapter having the base sequences of SEQ ID NO: 49 and 50;

pre-amplifying the ligated DNA fragment with an MseI

universal primer having the base sequence of SEQ ID NO: 51, and an EcoRI universal primer having the base sequence of SEQ ID NO: 52; and

amplifying the pre-amplified fragment with an eighteenth primer set that comprises a primer having the base sequence of SEQ ID NO: 45 and a primer having the base sequence of SEQ ID NO: 46.

19. A method for isolating a DNA fragment that includes a gene locus involved in barley resistance to yellow mosaic disease, using a genetic marker of any one of claims 1 through 18.

20. A method for producing a yellow mosaic disease-resistant barley, which comprises introducing a DNA fragment, isolated by the method of claim 19 and including a gene locus involved in barley resistance to yellow mosaic disease, into genomic DNA of barley.

21. A yellow mosaic disease-resistant barley produced by the method of claim 20.

22. A method for screening for a yellow mosaic disease-resistant barley, using a genetic marker of any one of claims 1 through 18 as an index.